

PCT

## NOTIFICATION OF ELECTION

(PCT Rule 61.2)

From the INTERNATIONAL BUREAU

To:

Assistant Commissioner for Patents  
United States Patent and Trademark  
Office  
Box PCT  
Washington, D.C.20231  
ÉTATS-UNIS D'AMÉRIQUE

in its capacity as elected Office

Date of mailing (day/month/year) 08 October 1999 (08.10.99)	
International application No. PCT/AU99/00173	Applicant's or agent's file reference
International filing date (day/month/year) 18 March 1999 (18.03.99)	Priority date (day/month/year) 18 March 1998 (18.03.98)
Applicant SHANKER, Sivaraj et al	

1. The designated Office is hereby notified of its election made:

☒ in the demand filed with the International Preliminary Examining Authority on:  
24 September 1999 (24.09.99)

☐ in a notice effecting later election filed with the International Bureau on:  
\_\_\_\_\_

2. The election ☒ was  
☐ was not

made before the expiration of 19 months from the priority date or, where Rule 32 applies, within the time limit under Rule 32.2(b).

The International Bureau of WIPO 34, chemin des Colombettes 1211 Geneva 20, Switzerland	Authorized officer S. Mafla
Facsimile No.: (41-22) 740.14.35	Telephone No.: (41-22) 338.83.38

QV

PATENT COOPERATION TREATY  
**PCT**  
INTERNATIONAL PRELIMINARY EXAMINATION REPORT

16  
~~PCT CORRECTED VERSION~~  
24 MAY 2000  
WIPO PCT

(PCT Article 36 and Rule 70)

Applicant's or agent's file reference 88824	<b>FOR FURTHER ACTION</b>	See Notification of Transmittal of International Preliminary Examination Report (Form PCT/IPEA/416).
International application No. PCT/AU99/00173	International filing date (day/month/year) 18 March 1999	Priority Date (day/month/year) 18 March 1998
International Patent Classification (IPC) or national classification and IPC  Int. Cl. <sup>7</sup> C02F 1/28, B01J 20/08		
Applicant THE AUSTRALIAN NATIONAL UNIVERSITY et al.		

1.	This international preliminary examination report has been prepared by this International Preliminary Examining Authority and is transmitted to the applicant according to Article 36.
2.	This REPORT consists of a total of 3 sheets, including this cover sheet.  <input checked="" type="checkbox"/> This report is also accompanied by ANNEXES, i.e., sheets of the description, claims and/or drawings which have been amended and are the basis for this report and/or sheets containing rectifications made before this Authority (see Rule 70.16 and Section 607 of the Administrative Instructions under the PCT).  These annexes consist of a total of 2 sheet(s).
3.	This report contains indications relating to the following items:  I <input checked="" type="checkbox"/> Basis of the report II <input type="checkbox"/> Priority III <input type="checkbox"/> Non-establishment of opinion with regard to novelty, inventive step and industrial applicability IV <input type="checkbox"/> Lack of unity of invention V <input checked="" type="checkbox"/> Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement VI <input type="checkbox"/> Certain documents cited VII <input type="checkbox"/> Certain defects in the international application VIII <input type="checkbox"/> Certain observations on the international application

**CORRECTED  
VERSION**

Date of submission of the demand 24 September 1999	Date of completion of the report 17 May 2000
Name and mailing address of the IPEA/AU AUSTRALIAN PATENT OFFICE PO BOX 200, WODEN ACT 2606, AUSTRALIA E-mail address: pct@ipaaustralia.gov.au Facsimile No. (02) 6285 3929	Authorized Officer  ALBERT S. J. YONG Telephone No. (02) 6283 2160

**V. Reasoned statement under Article 35(2) with regard to novelty, inventive step or industrial applicability; citations and explanations supporting such statement****1. Statement**

Novelty (N)	Claims 1-26	YES
	Claims	NO
Inventive step (IS)	Claims 1-26	YES
	Claims	NO
Industrial applicability (IA)	Claims 1-26	YES
	Claims	NO

**2. Citations and explanations (Rule 70.7)****Citations**

D1 1066942 (DERWENT ABSTRACT)

D2 JP 08-117737 (JAPIO ONLINE ABSTRACT)


**NOVELTY (N) & INVENTIVE STEP (IS)**

**Claims 1-26:** The claimed invention relates to the removal of protozoa from water using aluminium based medium containing surface Al-OH groups.

Citation D1 discloses the removal of enteroviruses from water by adsorption on boehmite, the pore size of which is much smaller than that of protozoa. D2 discloses the removal of negatively charged bacteria from water by adsorption on aluminium hydroxide. None of these citations discloses the removal of protozoa from water.

## INTERNATIONAL SEARCH REPORT

International application No.  
PCT/AU 99/00173

<b>A. CLASSIFICATION OF SUBJECT MATTER</b>																						
Int Cl <sup>6</sup> : C02F 1/28, B01J 20/08																						
According to International Patent Classification (IPC) or to both national classification and IPC																						
<b>B. FIELDS SEARCHED</b>																						
Minimum documentation searched (classification system followed by classification symbols) IPC C02F 1/28, C02B 1/14, C02B 3/02, C02C 5/02, E04H 3/20, E04H 4/16, B01J 20/08																						
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched AU: IPC AS ABOVE																						
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) WPAT: (IPC as above) and (alumin:) and (hydroxy: or OH or hydrat: or hydroxide or Al( )OH); also (alumin:) and (cryptosporidium or giardia or coli) JAPIO: as for WPAT																						
<b>C. DOCUMENTS CONSIDERED TO BE RELEVANT</b>																						
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.																				
X	Derwent Abstract Accession No. 84-224476/36, Class D15, SU 1066942 A (COLLOID CHEM WATER) 15 January 1984 Abstract	1-26																				
X	Derwent JAPIO Online Abstract Accession No. 96-117737, JP 08-117737 A (MATSUSHITA ELECTRIC IND CO LTD) 14 May 1996 Abstract	1-26																				
A	US 5242595 A (MORGART et al.) 7 September 1993 Whole document	1-26																				
<input checked="" type="checkbox"/> Further documents are listed in the continuation of Box C <input checked="" type="checkbox"/> See patent family annex																						
<p>* Special categories of cited documents:</p> <table border="0"> <tr> <td>"A"</td> <td>Document defining the general state of the art which is not considered to be of particular relevance</td> <td>"T"</td> <td>later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention</td> </tr> <tr> <td>"E"</td> <td>Earlier application or patent but published on or after the international filing date</td> <td>"X"</td> <td>document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone</td> </tr> <tr> <td>"L"</td> <td>Document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)</td> <td>"Y"</td> <td>document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art</td> </tr> <tr> <td>"O"</td> <td>Document referring to an oral disclosure, use, exhibition or other means</td> <td>"&amp;"</td> <td>document member of the same patent family</td> </tr> <tr> <td>"P"</td> <td>Document published prior to the international filing date but later than the priority date claimed</td> <td></td> <td></td> </tr> </table>			"A"	Document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention	"E"	Earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone	"L"	Document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art	"O"	Document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family	"P"	Document published prior to the international filing date but later than the priority date claimed		
"A"	Document defining the general state of the art which is not considered to be of particular relevance	"T"	later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention																			
"E"	Earlier application or patent but published on or after the international filing date	"X"	document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone																			
"L"	Document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)	"Y"	document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being obvious to a person skilled in the art																			
"O"	Document referring to an oral disclosure, use, exhibition or other means	"&"	document member of the same patent family																			
"P"	Document published prior to the international filing date but later than the priority date claimed																					
Date of the actual completion of the international search 11 June 1999		Date of mailing of the international search report <b>22 JUN 1999</b>																				
Name and mailing address of the ISA/AU AUSTRALIAN PATENT OFFICE PO BOX 200 WODEN ACT 2606 AUSTRALIA Facsimile No.: (02) 6285 3929		Authorized officer  <b>JIM LACKIE</b> Telephone No.: (02) 6283 2272 																				

## INTERNATIONAL SEARCH REPORT

International application No.

PCT/AU 99/00173

C (Continuation). DOCUMENTS CONSIDERED TO BE RELEVANT		
Category*	Citation of document, with indication, where appropriate, of the relevant passages	Relevant to claim No.
A	Derwent Abstract Accession No. 95-253242/33, Class B07 C07 D16 J01, RU 2026734 C (SORBI STOCK CO) 20 January 1995 Abstract	1-26
A	EP 626346 A (PELT and HOOYKAAS B.V.) 30 November 1994 Whole document	1-26
A	FR 2748468 A (REEB) 14 November 1997 Page 3 lines 92-94, page 4 lines 130-137, figure 1	1-26
A	US 4344928 A (DUPIN et al.) 17 August 1982 Whole document	1-26
A	Derwent Abstract Accession No. 95-011642/02, Class D22 E33 H04 J01, JP 06-298528 A (SUMITOMO CHEM CO LTD) 25 October 1994 Abstract	1-26

# INTERNATIONAL SEARCH REPORT

## Information on patent family members

International application No.

PCT/AU 99/00173

This Annex lists the known "A" publication level patent family members relating to the patent documents cited in the above-mentioned international search report. The Australian Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

Patent Document Cited in Search Report				Patent Family Member			
US	5242595	EP	511110	JP	05-146618		
EP	626346	CA	2124539	CZ	9401306	HU	73586
		NL	9300910	NL	9301919	PL	303628
		SK	634/94	US	5457272		
US	4344928	BR	8001095	CA	1153187	DE	3060286
		EP	15196	ES	488888	FR	2449650
		JP	55-116622	MX	6585		
END OF ANNEX							



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TX 31651 epo nl  
FAX +31 70 340 3016



Europäisches  
Patentamt

Zweigstelle  
in Den Haag  
Recherchen-  
abteilung

European  
Patent Office

Branch at  
The Hague  
Search  
division

Office européen  
des brevets

Département à  
La Haye  
Division de la  
recherche

Sundman, Christoffer  
Seppo Laine Oy,  
Itämerenkatu 3 B  
00180 Helsinki  
FINLANDE

Datum/Date

15.07.02

Zeichen/Ref./Réf.

AWT 1 EP

Anmeldung Nr./Application No./Demande n°/Patent Nr./Patent No./Brevet n°.

99910020.9-2104-AU9900173

Anmelder/Applicant/Demandeur/Patentinhaber/Propriétaire/Titulaire

THE AUSTRALIAN NATIONAL UNIVERSITY, et al

## COMMUNICATION

The European Patent Office herewith transmits as an enclosure the European search report for the above-mentioned European patent application.

If applicable, copies of the documents cited in the European search report are attached.

☐ Additional set(s) of copies of the documents cited in the European search report is (are) enclosed as well.

RECEIVED  
OCT 17 2002  
TC 1700 MAIL ROOM

## REFUND OF THE SEARCH FEE

If applicable under Article 10 Rules relating to fees, a separate communication from the Receiving Section on the refund of the search fee will be sent later.





DOCUMENTS CONSIDERED TO BE RELEVANT			
Category	Citation of document with indication, where appropriate, of relevant passages	Relevant to claim	CLASSIFICATION OF THE APPLICATION (Int.Cl.6)
X	FR 2 425 407 A (GOETZ SYLVIA) 7 December 1979 (1979-12-07)  * page 1, line 17 - line 29 * * page 1, line 1-6 * * page 8, line 26 - page 9, line 1 * ----	1,2,8, 11-15, 21,24-26	C02F1/28 B01J20/08
X	PATENT ABSTRACTS OF JAPAN vol. 014, no. 306 (C-0735), 3 July 1990 (1990-07-03) & JP 02 102780 A (SUPIRURINA KENKYUSHO:KK), 16 April 1990 (1990-04-16) * abstract *	1,2,8, 11-13	
X	PATENT ABSTRACTS OF JAPAN vol. 016, no. 449 (C-0986), 18 September 1992 (1992-09-18) & JP 04 158865 A (YOSHIAKI NAGAURO), 1 June 1992 (1992-06-01) * abstract *	1,2,8	
X	US 2 114 576 A (SCHINMAN EDWARD P) 19 April 1938 (1938-04-19) * column 1, line 19 - line 29 * * column 2, line 34 - line 44 * -----	1,2,11, 13	TECHNICAL FIELDS SEARCHED (Int.Cl.6)  C02F B01J
The supplementary search report has been based on the last set of claims valid and available at the start of the search.			
Place of search <b>MUNICH</b>		Date of completion of the search <b>5 July 2002</b>	Examiner <b>Beckmann, O</b>
<b>CATEGORY OF CITED DOCUMENTS</b> X : particularly relevant if taken alone Y : particularly relevant if combined with another document of the same category A : technological background O : non-written disclosure P : intermediate document  T : theory or principle underlying the invention E : earlier patent document, but published on, or after the filing date D : document cited in the application L : document cited for other reasons  & : member of the same patent family, corresponding document			



**ANNEX TO THE EUROPEAN SEARCH REPORT  
ON EUROPEAN PATENT APPLICATION NO.**

EP 99 91 0020

This annex lists the patent family members relating to the patent documents cited in the above-mentioned European search report. The members are as contained in the European Patent Office EDP file on  
The European Patent Office is in no way liable for these particulars which are merely given for the purpose of information.

05-07-2002

Patent document cited in search report		Publication date	Patent family member(s)	Publication date
FR 2425407	A	07-12-1979	FR 2425407 A1	07-12-1979
JP 02102780	A	16-04-1990	NONE	
JP 04158865	A	01-06-1992	NONE	
US 2114576	A	19-04-1938	NONE	



A DOCPHOENIX

## APPL PARTS

\_\_\_\_ IMIS \_\_\_\_  
Internal Misc. Paper

\_\_\_\_ LET. \_\_\_\_  
Misc. Incoming Letter

\_\_\_\_ 371P \_\_\_\_  
PCT Papers in a 371 Application

\_\_\_\_ A... \_\_\_\_  
Amendment Including Elections

\_\_\_\_ ABST \_\_\_\_  
Abstract

\_\_\_\_ ADS \_\_\_\_  
Application Data Sheet

\_\_\_\_ AF/D \_\_\_\_  
Affidavit or Exhibit Received

\_\_\_\_ APPENDIX \_\_\_\_  
Appendix

\_\_\_\_ ARTIFACT \_\_\_\_  
Artifact

\_\_\_\_ BIB \_\_\_\_  
Bib Data Sheet

\_\_\_\_ CLM \_\_\_\_  
Claim

\_\_\_\_ COMPUTER \_\_\_\_  
Computer Program Listing

\_\_\_\_ CRFL \_\_\_\_  
All CRF Papers for Backfile

\_\_\_\_ DIST \_\_\_\_  
Terminal Disclaimer Filed

\_\_\_\_ DRW \_\_\_\_  
Drawings

\_\_\_\_ FOR \_\_\_\_  
Foreign Reference

\_\_\_\_ FRPR \_\_\_\_  
Foreign Priority Papers

\_\_\_\_ IDS \_\_\_\_  
IDS Including 1449

\_\_\_\_ NPL \_\_\_\_  
Non-Patent Literature

\_\_\_\_ OATH \_\_\_\_  
Oath or Declaration

\_\_\_\_ PET. \_\_\_\_  
Petition

\_\_\_\_ RETMAIL \_\_\_\_  
Mail Returned by USPS

\_\_\_\_ SEQLIST \_\_\_\_  
Sequence Listing

\_\_\_\_ SPEC \_\_\_\_  
Specification

\_\_\_\_ SPEC NO \_\_\_\_  
Specification Not in English

\_\_\_\_ TRNA \_\_\_\_  
Transmittal New Application

\_\_\_\_ CTNF \_\_\_\_  
Count Non-Final

\_\_\_\_ CTRS \_\_\_\_  
Count Restriction

\_\_\_\_ EXIN \_\_\_\_  
Examiner Interview

\_\_\_\_ M903 \_\_\_\_  
DO/EO Acceptance

\_\_\_\_ M905 \_\_\_\_  
DO/EO Missing Requirement

\_\_\_\_ NFDR \_\_\_\_  
Formal Drawing Required

\_\_\_\_ NOA \_\_\_\_  
Notice of Allowance

\_\_\_\_ PETDEC \_\_\_\_  
Petition Decision

## OUTGOING

\_\_\_\_ CTMS \_\_\_\_  
Misc. Office Action

\_\_\_\_ 1449 \_\_\_\_  
Signed 1449

\_\_\_\_ 892 \_\_\_\_  
892

\_\_\_\_ ABN \_\_\_\_  
Abandonment

\_\_\_\_ APDEC \_\_\_\_  
Board of Appeals Decision

\_\_\_\_ APEA \_\_\_\_  
Examiner Answer

\_\_\_\_ CTAV \_\_\_\_  
Count Advisory Action

\_\_\_\_ CTEQ \_\_\_\_  
Count Ex parte Quayle

\_\_\_\_ CTFR \_\_\_\_  
Count Final Rejection

## INCOMING

\_\_\_\_ AP.B \_\_\_\_  
Appeal Brief

\_\_\_\_ C.AD \_\_\_\_  
Change of Address

\_\_\_\_ N/AP \_\_\_\_  
Notice of Appeal

\_\_\_\_ PA.. \_\_\_\_  
Change in Power of Attorney

\_\_\_\_ REM \_\_\_\_  
Applicant Remarks in Amendment

\_\_\_\_ XT/ \_\_\_\_  
Extension of Time filed separate

BACKFILE DOCUMENT INDEX SHEET

### Internal

\_\_\_\_ SRNT \_\_\_\_  
Examiner Search Notes

\_\_\_\_ CLMPTO \_\_\_\_  
PTO Prepared Complete Claim Set

\_\_\_\_ ECBOX \_\_\_\_  
Evidence Copy Box Identification

\_\_\_\_ WCLM \_\_\_\_  
Claim Worksheet

\_\_\_\_ WFEE \_\_\_\_  
Fee Worksheet

### File Wrapper

\_\_\_\_ FWCLM \_\_\_\_  
File Wrapper Claim

\_\_\_\_ IIFW \_\_\_\_  
File Wrapper Issue Information

\_\_\_\_ SRFW \_\_\_\_  
File Wrapper Search Info